

WHAT IS CLAIMED:

- 5 $sub A_2 >$
1. A process for preparing lube base stocks, the process comprising:
 - a) obtaining a first fraction with a 95% point above 1150°F as measured by ASTM D2887 and a second fraction with a 95% point below 1150°F as measured by
5 ASTM D2887;
 - b) subjecting the first fraction to Solvent Dewaxing conditions to obtain a lube base stock with a VI of greater than or equal to 115; and
 - c) subjecting the second fraction to Catalytic Dewaxing conditions to obtain a lube
10 base stocks having a viscosity less than the viscosity of the lube base stock of step b).
 2. The process of Claim 1 further comprising hydrotreating and dewaxing at least one of the factions selected from the group consisting of: hydrotreating followed by
15 dewaxing, dewaxing followed by hydrotreating, and combinations thereof.
 3. The process of Claim 1 further comprising Catalytic Dewaxing and Solvent
15 Dewaxing the first fraction selected from the group consisting of: Solvent Dewaxing followed by Catalytic Dewaxing, and Catalytic Dewaxing followed by Solvent Dewaxing.
 4. The process of Claim 3, wherein the Catalytic Dewaxing process is a
Hydroisomerization Dewaxing process.
 - 20 5. The process of Claim 4, wherein the Hydroisomerization Dewaxing process is a Complete Hydroisomerization Dewaxing process.
 6. The process of Claim 1, wherein the Catalytic Dewaxing process is a Hydroisomerization Dewaxing process.
 7. The process of Claim 6, wherein the Hydroisomerization dewaxing process is a
25 complete Hydroisomerization Dewaxing process.
 8. The process of Claim 1, wherein at least a portion of one of the first and second fractions is derived the group consisting of Fischer-Tropsch synthesis products, slack wax from conventional petroleum lube production, distillates from crude oil, deasphalted residual stocks from crude oil, and combinations thereof.

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9. The process of Claim 8, wherein at least a portion of one of the first and second fractions is derived from a Fischer-Tropsch synthesis products.

10. The process of Claim 1, wherein at least one the lube base stocks have a pour point/cloud point spread of less than 30°C.

^{sub A₃} 11. The process of Claim 1, wherein the lube base stocks have a pour point/cloud point spread of less than 10°C.

12. The process of Claim 1, wherein the pour point of at least one of the lube base stocks is less than -10°C.

^{sub A₄ 10} 13. The lube base stocks produced from the process according to Claim 1 having a pour point between -15 and -40°C, a VI above 115, a cloud point of less than -10°C, and a sulfur content of less than 300 ppm.

14. The product according to Claim 13, wherein at least one of the lube base stocks are combined with one or more lube oil additives selected from the group consisting of lubricity improvers, emulsifiers, wetting agents, densifiers, fluid-loss additives, viscosity modifiers, corrosion inhibitors, oxidation inhibitors, friction modifiers, demulsifiers, anti-wear agents, dispersants, anti-foaming agents, pour point depressants, detergents, and rust inhibitors.

15. The process of Claim 1, wherein at least one of lube base stocks are combined with one or more lube oil additives selected from the group consisting of lubricity improvers, emulsifiers, wetting agents, densifiers, fluid-loss additives, viscosity modifiers, corrosion inhibitors, oxidation inhibitors, friction modifiers, demulsifiers, anti-wear agents, dispersants, anti-foaming agents, pour point depressants, detergents, and rust inhibitors.

16. A lube base stock composition prepared by:

- 25 a) obtaining a first fraction with a 95% point above 1150°F and a second fraction with a 95% point below 1150°F,
- b) subjecting the first fraction to Solvent Dewaxing conditions, and
- c) subjecting the second fraction to Catalytic Dewaxing conditions,

whereby the compositions of step b) and c) have a pour point between -15 and -40°C, a VI above 115, a cloud point of less than -10°C, and a sulfur content of less than 300 ppm.

17. The compositions of Claim 16, further comprising one or more lube oil additives selected from the group consisting of lubricity improvers, emulsifiers, wetting agents, densifiers, fluid-loss additives, viscosity modifiers, corrosion inhibitors, oxidation inhibitors, friction modifiers, demulsifiers, anti-wear agents, dispersants, anti-foaming agents, pour point depressants, detergents, and rust inhibitors.
18. A lube base stock composition comprising a blend of a first fraction comprising a hydrocarbon stream prepared by Solvent Dewaxing a hydrocarbon fraction with a 95% point above 1150°F and a second fraction comprising a hydrocarbon stream prepared by Catalytic Dewaxing a hydrocarbon fraction with a 95% point below 1150°F.
19. The lube base stock composition of Claim 23, further comprising one or more lube oil additives selected from the group consisting of lubricity improvers, emulsifiers, wetting agents, densifiers, fluid-loss additives, viscosity modifiers, corrosion inhibitors, oxidation inhibitors, friction modifiers, demulsifiers, anti-wear agents, dispersants, anti-foaming agents, pour point depressants, detergents, and rust inhibitors.
20. A process for preparing lube base stocks, having pour cloud spreads less than 30°C, the process comprising:
- a) fractionating a lube base stock feedstock into at least a heavier and a lighter fraction;
 - b) catalytically dewaxing the fractions using a Hydrosomerization Dewaxing Catalyst;
 - c) measuring the pour-cloud spread on the dewaxed lube base stocks from the fractions; and
 - d) modifying the process to achieve lube base stocks having pour cloud spreads of less than 30°C from the process steps selected from the group consisting of

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Dennis J. O'Rear, et al.

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For: Process for Preparing Lubes with High
Viscosity Index Values



Group Art Unit: 1764

Examiner: UNASSIGNED

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PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination of the above-captioned patent application, kindly enter the following amendment.

In The Specification:

Kindly replace the paragraph beginning at Page 3, Line 12, with amended paragraph as follows:

A' Wax is commonly removed from lube base stocks by Solvent Dewaxing. Solvent Dewaxing to make lube base stocks has been used for over 70 years. An advantage of using Solvent Dewaxing is that the product pour and cloud points are reduced to approximately the same value. Limitations of Solvent Dewaxing include high operating costs, use of volatile and flammable solvents, environmental problems due to solvent emissions in the air and groundwater, and production of slack wax for which there is a limited market.

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adjusting the fractionation cut point, adjusting the fractionation efficiency, an additional process step of Solvent Dewaxing the lube base stocks, , an additional process step of adsorbent treating the lube base stocks and combinations thereof, whereby the lube base stocks have a pour point between -15 and -40°C, a VI above 115, a cloud point of less than -10°C, and a sulfur content of less than 300 ppm.

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